O.I.H.

GOVERNMENT OF INDIA

DEPARTMENT OF SPACE

RAJYA SABHA

UNSTARRED QUESTION NO. 3329

TO BE ANSWERED ON THURSDAY, AUGUST 21, 2025

SATELLITE DATA FOR AGRICULTURE, WATER RESOURCES AND DISASTER MANAGEMENT

3329. SHRI PRADIP KUMAR VARMA:

Will the PRIME MINISTER be pleased to state:

(a) the number of districts of Jharkhand where ISRO/ National Remote Sensing Centre has used satellite data for drought assessment, crop monitoring, groundwater recharge or waterbody mapping;

(b) whether the State Disaster Management Departments have been provided with space-based decision support systems for flood warnings, landslide probabilities and disasters such as forest fires;

(c) whether satellite technology has been beneficial in the implementation of schemes like Jal Shakti Abhiyan and Jal Jeevan Mission; and

(d) if so, the details thereof?

ANSWER

MINISTER OF STATE IN THE MINISTRY OF PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND IN THE PRIME MINISTER'S OFFICE

(DR. JITENDRA SINGH):

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(a) Paddy crop mapping, Kharif sown area, weekly sowing & harvesting progress, drought monitoring; groundwater prospects, recharge plan and quality mapping at 1:50,000 scale; monitoring of water spread of waterbodies of size greater than 1 ha (8,368 no.); mapping of wetlands at 1:50,000 scale (2017-18 time frame) and at 1:12,500 scale (2018-19 time frame) were carried out for all 24 districts of Jharkhand.

(b) Under the Disaster Management Support Programme (DMSP), Department of Space provides space-based products/ services to respective nodal Ministries / Departments and concerned State Disaster Management Authorities, including Jharkhand, for appropriate disaster management measures by them.

Specifically:

(i) Flood inundation mapped during major floods every year using satellite data are provided to concerned nodal departments of the States for effective flood disaster management.

(ii) Flood Hazard Zonation atlases developed using historical satellite-derived flood data since 1998 for several major flood-prone States, such as Assam, Bihar, Uttar Pradesh, West Bengal, Odisha, and Andhra Pradesh are disseminated to the respective States.

(iii) ISRO developed Spatial flood early warning systems for Godavari and Tapi Rivers as part of the National Hydrology Project are being run operationally by Ministry of Jal Shakti. Flood Early Warning System (FLEWS) is implemented for the flood affected districts of Assam and is being extended to other flood prone districts in the NER. Early warning from both these systems are provided to the concerned State departments.

(iv) Landslide Atlas of India comprising of geospatial landslide inventory database of ~80,000 landslides in India are mapped by NRSC/ ISRO during 1998-2022 period. The database covers landslide vulnerable regions in 17 States and 02 Union Territories of India, across the Himalaya and Western Ghats. This atlas is provided to State departments for necessary utilisation.

(v) Active forest fires are detected using satellite data daily 6 to 8 times during the Indian forest fire season, every year. These inputs are provided to FSI/ MoEF&CC and to concerned State Departments for Forest Fire Management measures.

(c) & (d)

ISRO/DoS has carried out groundwater prospects and quality mapping on 1:50,000 scale, for entire country under the Jal Jeevan Mission (JJM) of National Rural Drinking Water Program (NRDWP), Ministry of Jal Shakti. The final deliverable in the form of groundwater prospects maps have been provided to state line department for identification of potential groundwater sources and sites suitable for artificial recharge structure. ISRO/DoS has trained around 150 officers of state line departments in utilizing the groundwater prospects maps for taking appropriate decision on the field.

ISRO provided eight geospatial layers each for 1240 Jal Shakti Abhiyan (JSA) blocks and also hosted these on ISRO's Bhuvan-JSA Geoportal. The maps provided by ISRO helped JSA field teams for identifying sites for various water conservation/ recharge interventions executed under JSA. About 50 technical sessions were organized for the JSA teams by ISRO towards explaining the use of above maps.

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